Server Routing is in the Consumer's Interest

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Current Situation

- **The June 24, 2008 *Internet-based TRS Numbering Order* states that by December 31, 2008 TRS providers shall:**
    - *Provision to the central database the direct-device IP address of each of its clients*
    - *Ensure that all CPE devices are capable of communicating directly with each VRS provider without the need for any intervening server*
- **Part of the rationale for direct-device routing:**
    - *Simplified and efficient call setup process*
    - *Security vulnerabilities stemming from domain names in VRS URIs*
    - *Improved privacy*
    - *Speculation that a TRS provider might block or degrade calls*

Comparison of Routing Options

Direct-Device Routing		**Server Routing**
Direct connection between CPE devices	**What is it?**	Connects CPE devices through a server
No	**Uses Proxy Numbers?**	No
No	**Uses DNS in URI request?**	No
No impact	**e911 call handling?**	No impact
No flexibility for future development	**Promotes development of technology?**	Enables capabilities and features without modifications to CPE devices

Minimal Changes

- **NeuStar's centralized database already supports Server Routing; no major architecture change would be needed**

- **With Server Routing, TRS Providers would simply publish the Server's IP address instead of the Client's IP address:**

  *BEFORE: phone_number@**Client_IP***

  (2024139213@68.12.125.112)

  *AFTER: phone_number@**Server_IP***

  (2024139213@128.121.23.31)

Direct-Device Routing will adversely impact consumer experience

- **Consumers will be restricted to one CPE device per location**
  - *Forces sharing of phone number*
  - *Deprives choice of personal phone line*
- **Or, Consumers will have to bear extra costs for additional Internet lines/addresses**
  - *Additional expense in exchange for basic phone features*
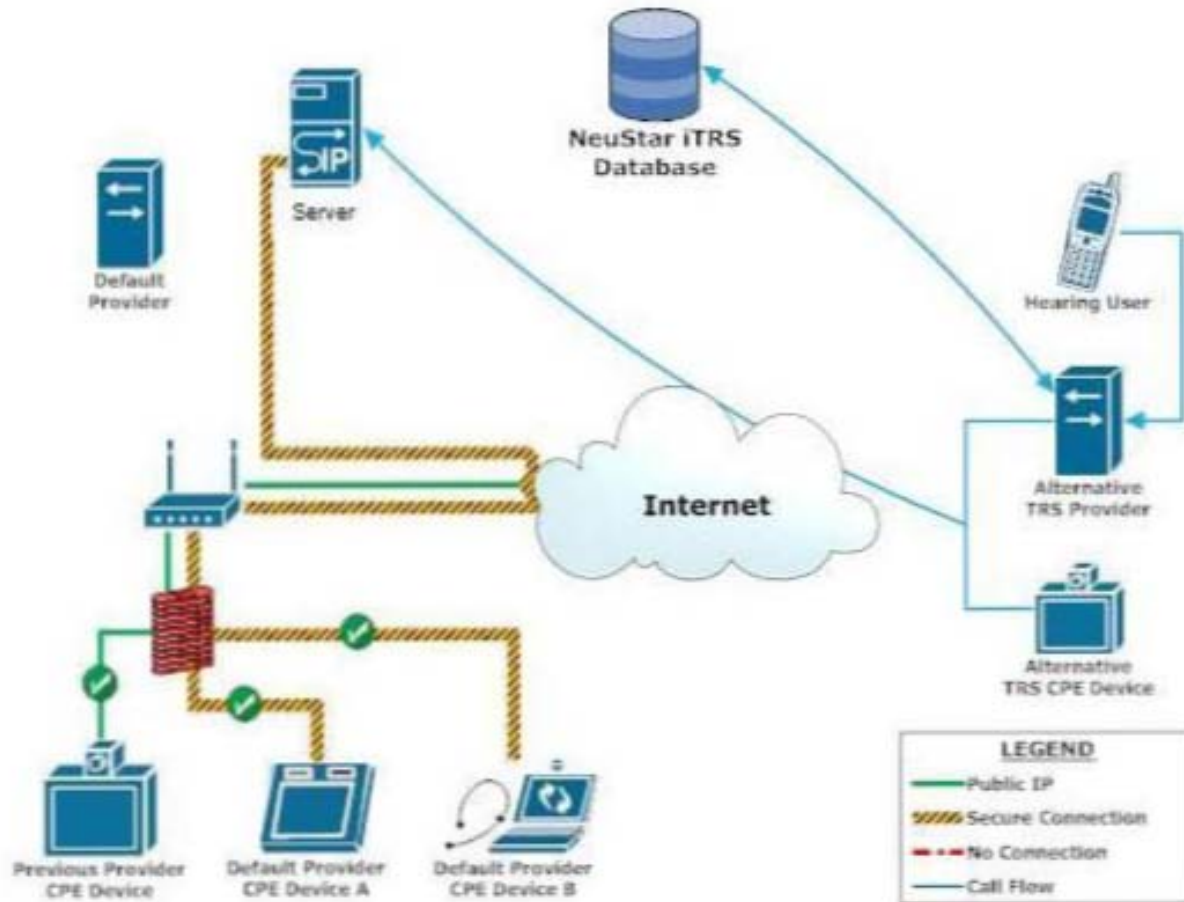 - *Creates hardship for households where multiple communication modes necessitate multiple devices*

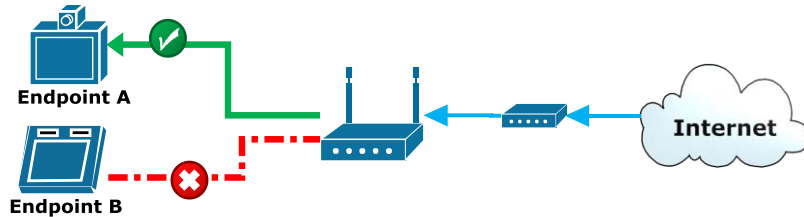# Direct-Device Routing
(limited to single CPE device)
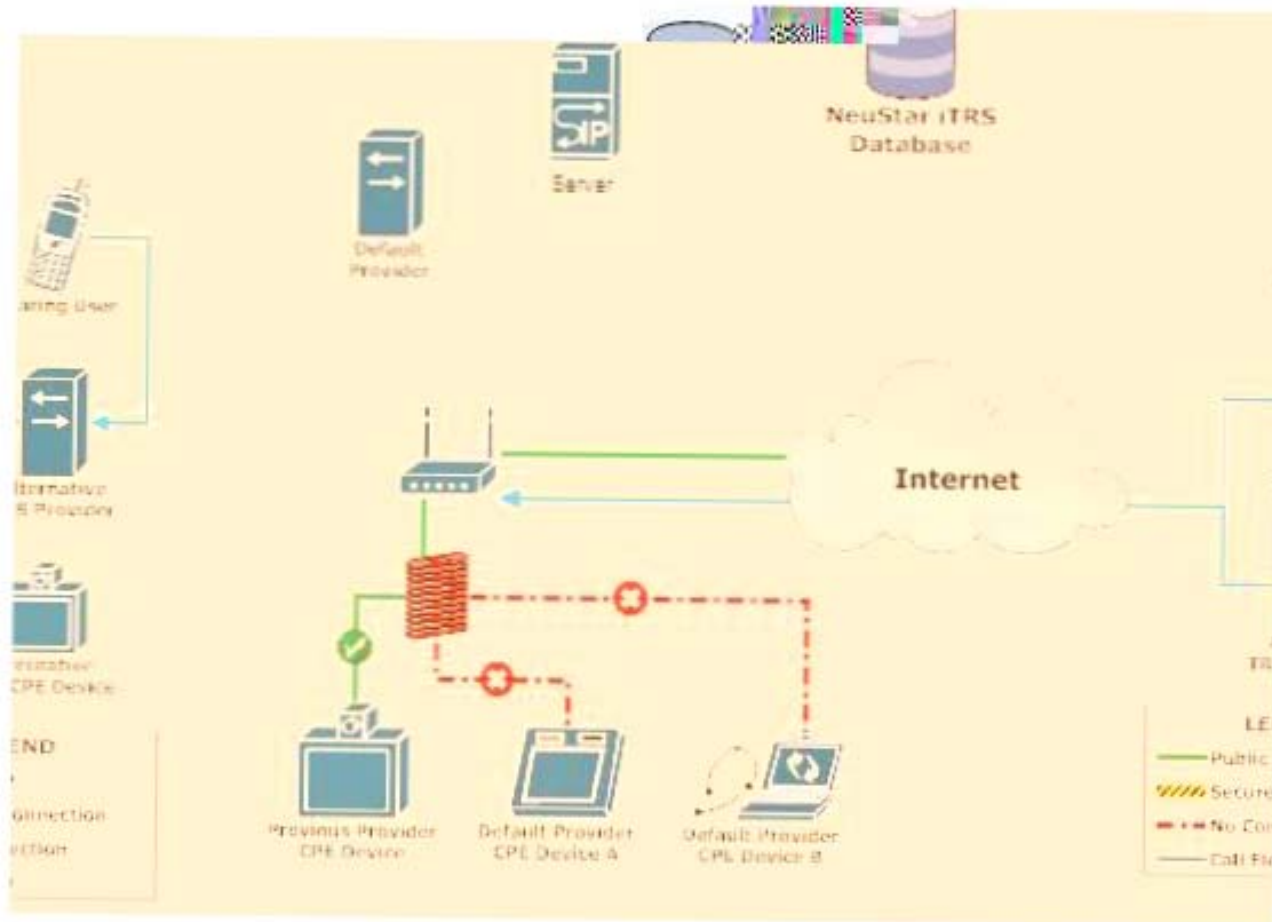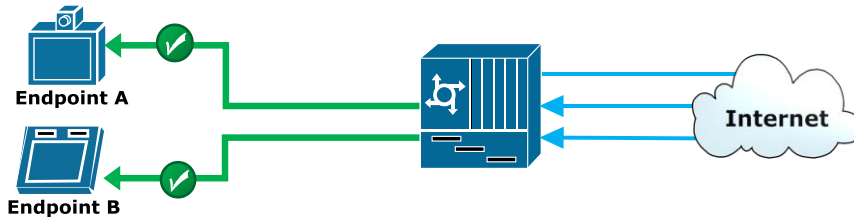
Server Routing
(allows multiple CPE Devices)

If Consumers want multiple CPE devices
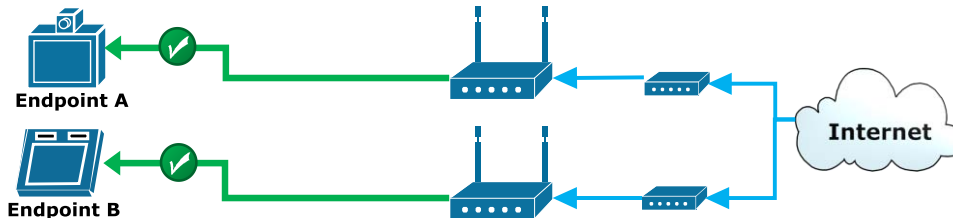
Direct-Device Routing

Limited to one device

Enterprise Firewall

Complicated & Costly

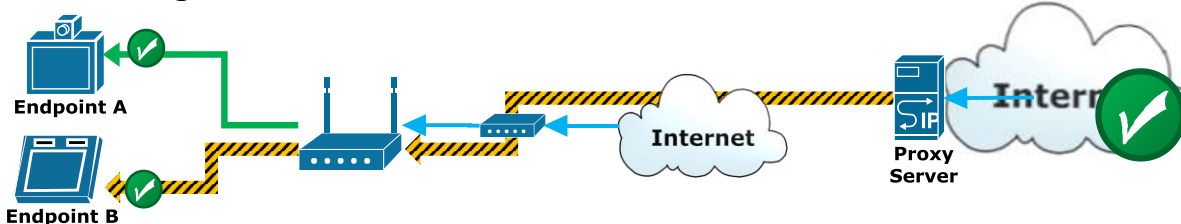**Separate Internet Line**

Incurs Unnecessary Costs

Server Routing

Easy & Cost Effective

Direct-Device Routing complicates firewall traversal

- **Easy setup will not be possible:**
  - *"Plug and Play" CPE devices will no longer function*
  - *NAT/firewall router will require configuration for each CPE device*
  - *Consumers will be unable to bring videophones to alternative locations without complicated setup, limiting the mobility of their CPE devices*
    - e.g. hospitals, hotels, public Internet access points
- **TRS Providers may pressure Consumers into using their router and selecting them as their default provider**

Comparison of Burden to the TRS Fund

Direct-Device Routing

Requires implementation of H.323 stack protocol on CPE Devices

Yes, need to provide pre-configured NAT Router

Yes, some features will be disabled and port-forwarding is complicated

Yes, self-installation will not be feasible

Server Routing

Not needed

No, devices will be plug-and-play

No, features will function as they always have

Intuitive setup will make Home installation optional

Retrofit CPE devices?

Provide additional equipment to consumers?

Perform additional consumer outreach & education?

Undertake complex CPE device distribution?

Server Routing enables services, features and protections

- **Multiple locations**
- **Multiple device logins**
- **Multiple devices per household**
- **Video mail**
  - *Videomail logic and storage are housed on VRS Provider's server, and will be disabled with direct-device routing.*
- **Consumer call routing preferences**
  - *Ability to modify universal settings across multiple devices will not be possible*
- **Is consistent with Section 225(d)(2)**
  - *The Commission has the obligation to ensure that TRS regulations encourage, not impair, the development of new technology*

Server Routing
addresses all concerns

- **"Simplified, and more efficient, call setup process"**
  - *Server Routing is equally effective and is also a one-step query*
- **"Domain names in VRS URIs would introduce security vulnerabilities"**
  - *Server Routing uses Server IP addresses, <u>not</u> Domain Names*
- **Compromised privacy**
  - *CPNI rules are more protective and can be enacted for specific situations*
- **Speculation that TRS providers might block calls or degrade video quality**
  - *Anticompetitive behaviors are clearly defined in the Interoperability Requirement*

Conclusion

- **Direct-Device Routing is technologically regressive**

- **Allowing Server Routing is in the Consumer's interest**
  - *Enables firewall-friendly setup and simplified interoperability*
  - *Is backward-compatible*
  - *Enables services, features and protections*
  - *Will spur continued innovation*
  - *Resolves existing issues without creating new ones*
  - *Promotes competition*
    - *Consumers retain use of multiple devices*
    - *Consumers retain choice of TRS provider*